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(54) PROCESS FOR THE REMOVAL OF
ORGANIC SUBSTANCES (TOC),
PESTICIDES, OR OTHER SUBSTANCES
FROM A SALT SOLUTION

(30) Foreign Application Priority Data

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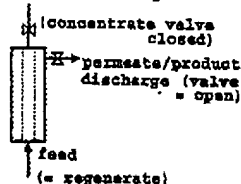
Related U.S. Application Data

(53) Continuation of application No. PCT/NL00/00545,
Filed on Feb. 26, 2000.

(57) ABSTRACT

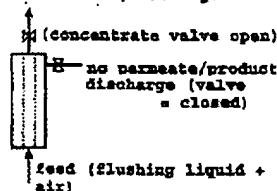
A process is provided for the removal of organic substances (TOC), pesticides or other specific compounds from an aqueous salt solution, for example from a regenerate derived from water purification. The TOC-containing aqueous salt solution is treated in a desalination membrane according to the dead-end principle, wherein neither longitudinal flow over the membrane with air and/or water, nor concentrate concentrate discharge takes place, after which the obtained permeate is treated, and the concentrate is obtained after flushing is discharged. The TOC-containing aqueous salt solution is introduced at the feed side of the membrane module at a flux of 5-75 l/m²h, a feed pressure of 4-12 bars for 30-40 minutes, while the obtained TOC-depleted permeate is discharged. Preferably, operation takes place at a flux of 15-25 l/m²h, a pressure of approximately 8 bars, and the duration of treatment is approximately 30 minutes. The membrane used is tubular, capillary, hollow fiber or helically wound, and is usually of the nanofiltration or reverse osmosis type.

no concentrate/discharge



3. Nanofiltration during
operation (dead-end)

concentrate/discharge



4. Nanofiltration during
flushing/concentrate
discharge

	U	I	Document ID	Issue Date	Pages	Title	Current QR	Current XRef	Retrieval Cto	Inventor	S	C	P	A	A
1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	US 20020070158 A1	20020613	10	MEMBRANE ELEMENT AND PROCESS FOR ITS PRODUCTION	210-321-74	210-321-33;		RUECHER, KLAUS et al.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	US 20020033385 A1	20020117	17	Water treatment systems and methods	210-748	210-493.4; 210-196.1;		Stevens, Donald B. SR., et al.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	US 20010034420 A1	20011227	10	Process for production of purified beet juice for sugar manufacture	217-55			Reisig, Richard C., et al.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	US 6113732 A	20000905	13	Method for removing contaminants from water using membrane filtration	210-636	210-650; 210-663;		Bengjamin, Mark M. et al.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
5	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	US 5635011 A	1997-0603	10	Recovery of carboxylic acids from chemical plant effluents	210-652	210-641; 210-651;		Al-Samadi, Riad A.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

19/286, 274

- | | Drawn | Quoted | Class |
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DB: {USPAT,USPOFUB,EPD,PD,DERIVNT,INVT,OF

DEFEND OFFENSE 07

RF

✓ **highlight all relevant notes**

membrane pdi nanofiltration and dead\$1 end

	U	I	Document ID	Issue Date	Pages	Title	Current OR	Current XRef	Retrieval Chs	Inventor	S	C	P	A	U
1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	US 20020147382 A1	20021010	36	Graft copolymers, methods for grafting hydrophilic chains onto hydrophobic surfaces	525/245	525/276, 525/292		Mayes, Anne M. et al.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	US 20010054430 A1	20011227	10	Process for production of purified beet juice for sugar manufacture	127/55			Reisig, Richard C. et al.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	US 6440222 B1	20020827	15	Sugar beet membrane filtration process	127/55	127/43, 127/46.2		Donovan, Michael et al.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	<input type="checkbox"/>	<input checked="" type="checkbox"/>	US 6406547 B1	20020818	13	Sugar beet membrane filtration process	127/55	127/43, 127/46.2		Donovan, Michael et al.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	<input type="checkbox"/>	<input checked="" type="checkbox"/>	US 6387186 B1	20020514	11	Process for production of purified beet juice for sugar manufacture	127/55	127/54		Reisig, Richard C. et al.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	<input type="checkbox"/>	<input checked="" type="checkbox"/>	US 5922200 A	19990713	22	Membrane filtration apparatus for dead end filtration	210/321.75	210/321.6, 210/321.64		Pearl, Steven R. et al.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	<input checked="" type="checkbox"/>	<input type="checkbox"/>	US 5919370 A	19990706	11	Integral, multi-asymmetric, semi-permeable membrane	210/646	210/499, 210/500.21		Rottger, Henning et al.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	<input checked="" type="checkbox"/>	<input type="checkbox"/>	US 5835071 A	19970603	10	Recovery of carboxylic acids from chemical plant effluents	210/652	210/641, 210/651		Al-Samadi, Riad A.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>